



Virginia Coastal Zone Management Program Semi-Annual Success Story ("Section C")

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Restoring an Ecosystem on the Seaside of Virginia's Eastern Shore

THE PROBLEM: In the 1930's hurricanes and disease wiped out all of the eelgrass on the Seaside of Virginia's Eastern Shore. As a result, the ecosystem of the bays between the mainland and the barrier islands nearly collapsed. Bay scallops, which rely on eelgrass beds as habitat, disappeared and other finfish and crabs that also relied on the grass beds became scarce. This was major blow to the local economy. This once abundant and diverse system was decimated and remained so for almost 80 years. The hypothesis as to why the system didn't recover was that the storms had changed the geology and hydrodynamics such that the waters were too turbid for eelgrass to survive.

THE FIX: In the late 1990's, a scientist at the Virginia Institute of Marine Science, Dr. Robert Orth, had strong doubts about that hypothesis, observing that the water clarity was actually quite good. He soon discovered a tiny patch of eelgrass in one of the seaside bays. Dr. Orth contacted the Virginia CZM Program and asked for funding to conduct exploratory research. In 1999 a small amount of CZM funding was provided to test the efficacy of harvesting seeds from plants in the York River and dispersing them in a Seaside bay.



Collecting seed-laden reproductive shoots from eelgrass in the York River to be transferred to the Seaside of Virginia's Eastern Shore. Photo courtesy of VIMS.

The seeds germinated and grew well, so the CZM Program continued to fund the research and in 2002 initiated a major restoration effort – the Seaside Heritage Program to capitalize on these early positive results. Virginia CZM's \$2,635,000 Seaside Heritage Program ran from 2002 – 2008 and in addition to eelgrass restoration, it incorporated work on ecotourism promotion and infrastructure construction, invasive reed removal, shorebird habitat research, shorebird predator removal, aquaculture BMPs, oyster inventory and reef construction, and public outreach efforts.



When the CZM Program initially convened government, academic and non-profit partners to lay out the goals and objectives of the Seaside Heritage Program, we settled on an audacious goal – to bring back a

sufficient acreage of eelgrass to allow for the re-introduction of the bay scallop. It seemed a pipe dream in 2002.

But the CZM Program invested \$654,000 in eelgrass research and restoration between 2002 and 2008 and another \$1,210,000 in eelgrass and bay scallop restoration between 2009 and 2018, **for a total investment of about \$1,860,000 over the 16 years.**

THE IMPACT: Today the eelgrass beds planted have spread to over 9,000 acres and the bay scallop has been re-introduced. CZM's Coastal GEMS website (www.coastalgems.org) hosts a story map with a



time series of maps showing the planting sites and how h grasses have spread over the years.

To wrap up the final year of CZM funding, the College of William and Mary produced a XX minute video featuring scientists from Virginia Institute of Marine Science and The Nature Conservancy, as well as the CZM Program Manager to document the history and success of the effort. The video is available at: <https://www.youtube.com/watch?v=MColdNXGPfE&feature=youtu.be>

An article in the Winter 2019 issue of the William and Mary Alumni magazine was also produced. Reprints are available from the Virginia CZM Program and online at: <https://www.deq.virginia.gov/Portals/0/DEQ/CoastalZoneManagement/FundsInitiativesProjects/task10-16b.pdf>

MORE INFORMATION: To see the final report for this multi-year project visit the Virginia CZM Program website at:



<https://www.deq.virginia.gov/Portals/0/DEQ/CoastalZoneManagement/FundsInitiativesProjects/task10-16a.pdf>

PARTNERS: The Virginia Coastal Zone Management Program worked extensively with the Virginia Institute of Marine Science. The Virginia Marine Resources Commission provided major funding for several years through its Saltwater Fishing License fund. American Recovery and Reinvestment Act of 2009 also provided funds one year through the ACOE. The Nature Conservancy's Virginia Coast Reserve organized volunteers to help collect seeds from reproductive shoots and assisted with tending seeds held in large seawater circulation tanks over the summers until they could be distributed in the fall. TNC also secured funding from the Volgenau Foundation.

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